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GROUP 3600

Case No.: EQUUS-063A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Keith Andreasen ) Conf. No.: 4721  
Serial No.: 10/036,601 ) ) Group No.: 3661  
Filed: December 31, 2001 ) ) Examiner: Gary Chin  
For: AUTOMOTIVE CODE READER ) )

DECLARATION

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

I Keith Andreasen hereby declare as follows:

1. I am employed as a project manager for Innova Electronics Corporation, the Assignee of the above referenced application.
2. I submit this application in support of Applicant's arguments in response to the Office Action dated April 11, 2003.
3. Attached hereto as Exhibit 1 is a copy of my resume, which accurately depicts my educational and professional background, including automotive certifications relevant to the operation of vehicle electronic computing units (ECU) and code readers/scan tools operative to communicate with the ECUs.
4. As is reflected in my resume, I have been engaged in the field of automotive diagnostics for over 20 (twenty) years, and I am familiar with the techniques and tools of displaying automotive diagnostic information.
5. Based on my knowledge and experience in the field of automotive diagnostics, my familiarity with various automotive diagnostic products sold by different companies, and my familiarity with applicable standards and regulations governing the operating of automotive diagnostic equipment, I am aware of the state of the art of

automotive diagnostic scan tools and code readers as of the filing date of the present application, i.e. December 31, 2001.

6. As of December 31, 2001 those skilled in the field of automotive diagnostics were knowledgeable with respect to how to construct a scan tool or code reader that would function to automatically determine the communication protocol used by the vehicle under test. Such functionality was included within products available as of that date, such as the Mastertech products marketed by Vatronix Corp., and illustrated at Exhibits 6 and 7. Such functionality was also an industry standard, as reflected in SAE J1978.

7. As of the filing date those skilled in the art were also familiar with apparatus and techniques for autonomously accessing and retrieving data from the ECU, after the communication protocol was identified. That data includes information such as the monitors supported in the vehicle under test, and the status of those monitors.

8. However, as of the filing date those skilled in the art are not known to have devised a scan tool or code reader which presents an integrated display of information including trouble codes, trouble code descriptions, monitors supported and monitor status, to allow user to determine the vehicle status from an inspection of a single display, in response to a single user input signal, without the requirement of navigating a user interface to sequentially retrieve portions of such information.

9. Avoiding the requirement that the user navigate an interface, scrolling through various menus/options to access different information from the ECU, provides significant advantages to the user. It reduces the time necessary to operate the tool, and avoids the need to read through shop manuals to identify the appropriate procedures to evaluate vehicle status. As such, the present invention provides significant advantages to backyard mechanics or the like, who have no training in automotive diagnostics, and have no desire to devote the effort to become familiar with the process for navigating user interfaces in order to access different diagnostic information.

10. Attached hereto as Exhibit 2 is a copy of SAE J 1978, which describes the standard functions that an OBD Scan Tool will support. SAE J 1978 was published in approximately June 1994. As set forth in SAE J 1978, automatic hands-off determination of the communication protocol was a required functionality of OBD scan tools as of June

1994. In practice, this means that the diagnostic tool will be able to recognize the communication protocol that the vehicle under test responds to, e.g. typically one of the following five protocols which correspond to those used by leading car manufacturers:

- a. ISO 9142-2
- b. J1850 PWM
- c. J1850 VPW
- d. KWP2000 ISO 14230-4
- e. CAN

11. Once the communications protocol is known, typically by sequentially transmitting different protocols and determining which protocol generates an appropriate response, the scan tool will poll the ECU to download the stored information contained therein. The polling process, also proceeds automatically in devices that are compliant with SAE J 1978. However, the vehicle status information downloaded from the ECU is typically routed to memory within conventional scan tools, and in particular to memory locations associated with individual test modes, e.g. engine mode, transmission mode, suspension mode, etc. To access and display of that information the scan tool user must typically scroll through multiple menus to be able to identify the diagnostic information associated with a particular mode of interest. While such menu driven devices may be useful for sorting, storing, or operating on vehicle diagnostic information, such devices have limitations when placed in the hands of untrained personnel.

12. When untrained users attempt to operate conventional, menu driven scan tools, they may be uncertain as to whether or not they have accessed the proper mode of information to identify appropriate monitors supported by the vehicle, the status of those monitors, and other trouble codes that may be associated with different modes. In short, such devices frequently do not provide an untrained user with important diagnostic information that has been downloaded but not displayed. Nor does the user necessarily even have a sense that there is any diagnostic problem with the vehicle, where such problem information is not readily visible or accessed.

13. Attached hereto as Exhibit 3 is a copy of a reference entitled On Board Diagnostic Hand-Held Scan Tool Technology, published by the Environmental Protection Agency, dated October 2000 (EPA 420-R-00-017). The reference refers to the

SAE requirement of OBD scan tools, including those set forth in SAE J 1978 (Page 6). The reference also refers to difficulties arising from inconsistent nomenclature, which can contribute to confusion in the use of such tools. (Paragraph 9.2, Page 12.)

14. Attached hereto as Exhibit 4 is a copy of promotional material distributed by Vetronix Corp. respecting the MTS 3100 Mastertech Multi-Function Tester Product Line. The reference bares a date of August 1999. Exhibit 4 describes the functionality of the MTS 3100 product, which functions to automatically determine the communication protocol (page 6). As shown therein the diagnostic data is separated by multiple modes of diagnostic information, which is accessed by a menu driven user interface.

15. Attached hereto as Exhibit 5 is a copy of a publication from Vetronix Corporation entitled Mastertech/Tech1A Vehicle Software. The materials bear a publication date of October 1997. Exhibit 5 also specifies that the Mastertech product automatically determines the vehicle communication protocol (Page 18).

I declare that the foregoing is true and correct under penalty of perjury.

Date: 10-7-03

By:

  
Keith Andreasen

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